

SOME WOOD-DESTROYING FUNGI OF JAVA

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In the summer of 1921, Dr. Carl Hartley sent to me from Buitenzorg a package of specimens of the higher fungi, of species which he had observed to be destructive to timber of Java. My study in the determination of these specimens has shown that some of the species have a taxonomic interest in addition to their economic importance, the latter falling in the field of Dr. Hartley for extended consideration.

The following species were received:—

POLYPORACEAE

Fomes Korthalsii (Lév.) Cooke, as understood by Bresadola, *Hedwigia* 51: 312. 1912.

Butt rot on living *Castanea argentea*, West Java, *C. Hartley* (in Mo. Bot. Gard. Herb., 59493).

Common on living *Castanea*, Tjiboda, West Java, *C. Hartley* (in Mo. Bot. Gard. Herb., 59491).

Fomes pectinatus (Kl.) Cooke.

Parasitic on *Tabernaemontana sphaerocarpa*, Madjokerto, East Java, *C. Hartley & R. D. Rands* (in Mo. Bot. Gard. Herb., 59510).

Fomes velutinosus Hutchins in Lloyd, *Myc. Writ.* 4: Syn. Fomes 260. *text f.* 599. 1915.

On dead koerea, West Java, *C. Hartley* (in Mo. Bot. Gard. Herb., 59507).

This species is suggestive of *Polyporus gilvus* in aspect and coloration and presence of setae in the hymenium but has colored spores $5 \times 4 \mu$ and the tubes in two strata.

Fomes (Ganoderma) applanatus Fr.

On stump of *Acacia decurrens*, Buitenzorg, Java, *C. Hartley* (in Mo. Bot. Gard. Herb., 59504).

Polystictus elongatus (Berk.) Fr.

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On dead *Quercus pseudo-mollucca*, altitude 5000 ft., West Java, C. Hartley (in Mo. Bot. Gard. Herb., 59505).

Polystictus nothopus Lév. in Sacc. Syll. Fung. 6: 233. 1888.
Plate 2, fig. 1.

Polyporus notopus Léveillé, Ann. Sci. Nat. Bot. III. 2: 194. 1844.

On dead *Vernonia arborea*, altitude 4500 ft., West Java, C. Hartley (in Mo. Bot. Gard. Herb., 59515).

This species was described by Léveillé as follows:—

“Pileo duro suborbiculari, subvelutino obsolete zonato, poris inconspicuis rotundis fuscis, stipite dorsali brevi obliquo sursum attenuato pileo concolori.

“—Hab. Java, ad truncos.

“*Polyporus proboscideus* Junghuhn (herb. Lugd. Batav.).

“Chapeau petit, presque ligneux, large de 4 à 6 millimètres, très curieux, parce que le pédicule nâit à peu près à la partie moyenne de la face supérieure du chapeau, et se dirige obliquement en haut et en arrière pour se fixer; la couche de pores regarde, malgré cette disposition, vers la terre.”

Judging by the specimens received, the pilei are gregarious, very small, conical, pendant, dorsally attached, either centrally or somewhat obliquely, 4–10 mm. broad, 3–4 mm. thick from point of attachment to the mouth of the pores; the surface cinnamon-buff of Ridgway, sericeous to subvelutinous, obscurely zonate; the margin thin, entire usually, slightly lobed in one instance; context light buff, woody; tubes 150 μ long, mouths cinnamon-buff, angular, about 10 to a mm.; basidia simple, pyriform, $7\frac{1}{2} \times 3\frac{1}{2}$ –4 μ ; spores hyaline, even, 4×3 – $3\frac{1}{2}$ μ ; no seta, cystidia, hyphal fascicles, nor gloeocystidia. *Xanthochrous opisthopus* Patouillard, Bull. Mus. Hist. Nat. 29: 336. 1923, from Annam, should be compared with *P. nothopus*.

Polystictus spadiceus (Jungh.) Cooke.

On dead *Altingia excelsa*, West Java, C. Hartley (in Mo. Bot. Gard. Herb., 59512).

Poria medulla-panis Pers.

On stump, West Java, C. Hartley (in Mo. Bot. Gard. Herb., 59505).

The specimens are broadly resupinate and stratose but infested by a Hyphomycete and sterile.

Poria sp.

On dead *Vernonia arborea*, altitude 4500 ft., West Java, C. Hartley (in Mo. Bot. Gard. Herb., 59506).

The fructification is resupinate on a rotten limb, and covering an area 10 cm. long, 2-3½ cm. broad, between warm buff and antimony yellow of Ridgway in dry condition; pores with mouths angular, about 4 to a mm. The hymenium is deteriorated and shows neither basidia nor spores.

Trametes corrugata (Pers.) Bres.**Polystictus Persoonii Cooke.**

On living *Hevea brasiliensis*, Buitenzorg, Java, R. D. Rands, 192 (in Mo. Bot. Gard. Herb., 59497).

HYDNACEAE

Hydnum obrutans Burt, n. sp.

Plate 2, fig. 2.

Type: in Mo. Bot. Gard. Herb.

Fructification resupinate, long and widely effused, not separable, white, becoming up to 2½ cm. thick by the older teeth becoming buried and grown together under those of more recent formation, soft and easily sectioned when moistened; teeth white, cylindric, subulate, oblique, nearly parallel with the substratum, free portion 1-2 mm. long, about 3-4 to a mm.; no setae, cystidia, nor gloeocystidia; basidia simple; spores hyaline, even, globose, 4½ μ in diameter, copious.

Fructifications large; fragments fractured on all sides, up to 10 cm. long, 2½ cm. wide, 5 mm.-2½ cm. thick; teeth about 200-250 μ in diameter.

Causing heart rot of living trunks of *Quercus* sp., 4500 ft. altitude, West Java, C. Hartley, type (in Mo. Bot. Gard. Herb., 59520).

This species is noteworthy by its parasitic nature, great thickness attained through consolidation together of the buried teeth comparable with that of the tubes of a *Fomes*, white color, and fracturing into chalk-like masses when dry but soft and not truly fleshy nor calcareous when moistened.

THELEPHORACEAE

Stereum obscurans Burt, n. sp.

Plate 2, fig. 3.

Type: in Mo. Bot. Gard. Herb.

Pileus coriaceous, rigid, thin, broadly wedge-shaped to dimidiate, sessile, tapering to a point of attachment, the upper surface tawny olive of Ridgway, somewhat radiately rugose, short tomentose, with the tomentum disappearing more or less near the margin in narrow zones and there showing the pallid quaker drab surface of the bared areas, the margin more or less lobed; in structure 800 μ thick, with the intermediate layer composed of densely and longitudinally arranged, slightly colored hyphae, and bordered on the upper side by a broad dark zone which bears the tomentum of the covering; hymenium glabrous, pallid quaker drab, blackening when sections are treated with dilute potassic hydrate; no setae, cystidia, nor gloeocystidia; no spores found.

Pilei 4–5 cm. long, 5–6 cm. broad.

On dead wood, Tjibodas, West Java, *R. D. Rands*, comm. by *C. Hartley*, type (in Mo. Bot. Gard. Herb., 59518).

The two pilei received have had the marginal portions broken away near the point of attachment but lead me to believe that they were not connected with a reflexed portion nor umbonate-sessile. The hymenium, margin, and some zones of the upper surface of the pileus are tinged with pallid quaker gray of Ridgway, i. e., livid like the hydrogen arsenide flame. In lactic acid mount the sections show their hyphae to be somewhat rough-walled, as though resinous incrusting—especially so the tomentum on surface of pileus, the dark zone bearing the tomentum, and the hymenium; dilute potassic hydrate blackens all the incrusting matter and also the contents of many hyphae. I have observed similar incrusting matter and color changes in no species studied by me heretofore.

Hymenochaete nigricans (Lév.) Pat.

On dead *Altingia excelsa*, altitude 4000 ft., West Java, *C. Hartley* (in Mo. Bot. Gard. Herb., 58683).

Aleurodiscus acerinus (Pers.) v. Höhn. & Litsch.

On living *Theobroma excelsa*, Buitenzorg, *C. Hartley* (in Mo. Bot. Gard. Herb.).

TREMELLACEAE

Heterochaete tenuicula (Lév.) Pat.

On dead *Arikakadoea* sp., altitude 5000 ft., West Java, *C. Hartley* (in Mo. Bot. Gard. Herb., 58684).

Protomerulius javensis Burt, n. sp.

Plate 2, fig. 4.

Type: in Mo. Bot. Gard. Herb.

Fructifications resupinate, effused in elongated patches, coriaceous, separable when moist, drying tawny olive of Ridgway, and showing under the microscope an imperfectly porose surface with thin irregular folds and dissepiments somewhat lacerate; pores angular, sinuose, shallow, about $60\ \mu$ deep, about 10 to a mm., sometimes elongated laterally and divided by cross partitions into smaller, equal, angular pits or pores; in structure about $400\ \mu$ thick, composed of densely interwoven, slightly colored, non-incrusted, thick-walled hyphae $2\ \mu$ in diameter; basidia pyriform, longitudinally cruciately septate, $12-18 \times 6-7\ \mu$; spores simple, hyaline, even, curved, $15 \times 4\ \mu$, but few found.

Fructifications up to 5 cm. long, 2-3 cm. wide, about $\frac{1}{2}$ mm. thick.

On dead, rotten limbs of *Castanea argentea*, 5000 ft. altitude, West Java, C. Hartley, type (in Mo. Bot. Gard. Herb., 59516).

Other species of *Protomerulius* are *P. brasiliensis* A. Möller and *P. Farlowii* Burt—the first from Brazil and the second from New Hampshire. The occurrence of these 3 species at such great distances apart is remarkable.

A mycelium causing a locally destructive root-rot of teak was also received, but I could detect no fructifications by which it might be identified.

On roots of teak, *Tectonia grandis*, East Java, C. Hartley (in Mo. Bot. Gard. Herb., 59521).

EXPLANATION OF PLATE

PLATE 2

Fig. 1. *Polystictus nothopus* from specimens collected by C. Hartley, $\times 2$. Three fructifications showing upper surface, *a*; *b*, another fructification showing under side and pores; *c*, a fructification divided longitudinally to show the interior and depth of the tubes.

Fig. 2. *Hydnum obrutans*. Portion of the type specimen showing the teeth, $\times 2$, *a*; diagram of part of vertical longitudinal section, $\times 10$, showing free portions of the teeth borne on stratified buried teeth, *b*; three spores, *s*, $\times 750$.

Fig. 3. *Stereum obscurans*. Two pilei of type specimen showing upper surface, natural size.

Fig. 4. *Protomerulius javensis*. Part of type specimen showing hymenial folds and pits, $\times 2$, *a*; vertical section of fructification showing hymenial folds or dissepiments, *d*, and pits or pores, *p*, $\times 90$. The basidia are the 2-11 small, dark, clavate organs near the bottom of each pit. Two basidia, $\times 750$, *b*; two spores, $\times 750$, *s*.